

What is claimed is:

1. A multi-carrier CDMA communication apparatus comprising:

5        converting means for converting an information signal with a single sequence to information signals with a plurality of sequences subjected to spreading processing;

10        generating means for generating a multi-carrier signal by multiplexing the respective information signals with said plurality of sequences subjected to spreading processing on sequence-specific carriers;

      peak power detecting means for detecting peak power of said multi-carrier signal; and

15        transmitting means for transmitting only a multi-carrier signal whose peak power is not greater than a threshold.

20        2. A multi-carrier CDMA communication apparatus comprising:

      converting means for converting an information signal with a single sequence to information signals with a plurality of sequences subjected to spreading processing;

25        generating means for generating a multi-carrier signal by multiplexing the respective information signals with said plurality of sequences subjected to spreading processing on sequence-specific carriers;

peak power detecting means for detecting peak power of said multi-carrier signal; and

regenerating means for regenerating a multi-carrier signal when said peak power exceeds a threshold by  
5 multiplexing a signal for suppressing peak power instead of an information signal on at least one specific carrier out of said carriers.

3. The multi-carrier CDMA communication apparatus  
10 according to claim 2, wherein said generating means multiplexes the information signal subjected to error correcting coding processing before spreading processing out of information signals with a plurality of sequences subjected to spreading processing on a specific carrier.

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4. The multi-carrier CDMA communication apparatus according to claim 2, wherein said regenerating means uses a random signal as a signal for suppressing peak power.

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5. The multi-carrier CDMA communication apparatus according to claim 2, wherein said regenerating means uses a signal whose amplitude is quasi-zero as the signal for suppressing peak power.

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6. The multi-carrier CDMA communication apparatus according to claim 2, further comprising clipping means for carrying out clipping processing on a multi-carrier

signal whose peak power exceeds a threshold out of the generated or regenerated multi-carrier signals.

7. The multi-carrier CDMA communication apparatus  
5 according to claim 2, wherein said converting means comprising:

sequence converting means for converting an information signal with a single sequence to information signals with a plurality of sequences; and

10 spreading means for carrying out spreading processing on said respective information signals with a plurality of sequences.

8. The multi-carrier CDMA communication apparatus  
15 according to claim 2, wherein said converting means comprising:

spreading means for carrying out spreading processing on the information signal with the single sequence; and

20 sequence converting means for converting an information signal with a single sequence subjected to spreading processing to information signals with a plurality of sequences.

25 9. A communication terminal apparatus equipped with a multi-carrier CDMA communication apparatus, said multi-carrier CDMA communication apparatus comprising:

converting means for converting an information

signal with a single sequence to information signals with a plurality of sequences subjected to spreading processing;

generating means for generating a multi-carrier  
5 signal by multiplexing the respective information signals with said plurality of sequences subjected to spreading processing on sequence-specific carriers;

peak power detecting means for detecting peak power of said multi-carrier signal; and

10 transmitting means for transmitting only a multi-carrier signal whose peak power is not greater than a threshold.

10. A communication terminal apparatus equipped with a  
15 multi-carrier CDMA communication apparatus, said multi-carrier CDMA communication apparatus comprising:

converting means for converting an information  
signal with a single sequence to information signals with a plurality of sequences subjected to spreading  
20 processing;

generating means for generating a multi-carrier  
signal by multiplexing the respective information signals with said plurality of sequences subjected to spreading processing on sequence-specific carriers;

25 peak power detecting means for detecting peak power of said multi-carrier signal; and

regenerating means for regenerating a multi-carrier  
signal when said peak power exceeds a threshold by

multiplexing a signal for suppressing peak power instead of an information signal on at least one specific carrier out of said carriers.

- 5 11. A base station apparatus equipped with a multi-carrier CDMA communication apparatus, said multi-carrier CDMA communication apparatus comprising:

converting means for converting an information  
signal with a single sequence to information signals with  
10 a plurality of sequences subjected to spreading  
processing;

generating means for generating a multi-carrier  
signal by multiplexing the respective information signals  
with said plurality of sequences subjected to spreading  
15 processing on sequence-specific carriers;

peak power detecting means for detecting peak power  
of said multi-carrier signal; and

transmitting means for transmitting only a  
multi-carrier signal whose peak power is not greater than  
20 a threshold.

12. A base station apparatus equipped with a multi-carrier CDMA communication apparatus, said multi-carrier CDMA communication apparatus comprising:

25 converting means for converting an information  
signal with a single sequence to information signals with  
a plurality of sequences subjected to spreading  
processing;

generating means for generating a multi-carrier signal by multiplexing the respective information signals with said plurality of sequences subjected to spreading processing on sequence-specific carriers;

5 peak power detecting means for detecting peak power of said multi-carrier signal; and

regenerating means for regenerating a multi-carrier signal when said peak power exceeds a threshold by multiplexing a signal for suppressing peak power instead  
10 of an information signal on at least one specific carrier of said carriers.

13. A multi-carrier CDMA communication method comprising:

a converting step of converting an information  
15 signal with a single sequence to information signals with a plurality of sequences subjected to spreading processing;

a generating step of generating a multi-carrier signal by multiplexing the respective information signals  
20 with said plurality of sequences subjected to spreading processing on sequence-specific carriers;

a peak power detecting step of detecting peak power of said multi-carrier signal; and

a transmitting step of transmitting only a  
25 multi-carrier signal whose peak power is not greater than a threshold.

14. A multi-carrier CDMA communication method comprising:

